Quantum Information Seminar

The strong converse exponent of classical-quantum channel coding with constant compositions

Dr. Milán Mosonyi

Date:
July 11, 2019
Thursday
2:00-3:00pm

Venue:
Room 308
Chow Yei Ching Building
The University of Hong Kong

Abstract:

There are different natural-looking ways to quantify the usefulness of a classical-quantum channel for information transmission. Given a quantum divergence (e.g., a Rényi divergence) and an input distribution P, one can define the corresponding mutual information, which is the divergence "distance" of the joint input-output state from the set of product states with fixed first marginal P. An alternative approach is to measure how spread out the channel states are in the state space, giving rise to the concept of the P-weighted divergence radius. We show that it is this latter notion that admits an operational interpretation in the context of constant composition channel coding, with the divergence being the sandwiched Rényi divergence.

About the Speaker:

Milán Mosonyi obtained his PhD in theoretical physics in 2005 at the Catholic University of Leuven, under the supervision of Mark Fannes and Dénes Petz. He has been an assistant professor (since 2005) and later an associate professor (since 2012) at the Institute of Mathematics, Budapest University of Technology and Economics. Between 2006 and 2016 he was in research positions at Tohoku University, National University of Singapore, University of Bristol, Autonomous University of Barcelona, and the Technical University of Münich. His main research interests are quantum Shannon theory and mathematical physics.

All are welcome!
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